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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,415

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Yafim Plopski

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EXAMINER

SINGH, PREM C

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/533,415

Applicant(s)

PLOPSKI, YAFIM

Examiner

Prem C. Singh

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-9 are objected to because of the following informalities:

Claims 1-9 use some times step (one), (two), .....(seven) and some times use step (a), (b),.....(g) respectively.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitation "the water content" in (one). There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the formed slurry product" in (three). There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the recirculating solvent" in (seven). There is insufficient antecedent basis for this limitation in the claim.

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5. Claim 6 recites the limitation "the ratio of solvent". There is insufficient antecedent basis for this limitation in the claim.

6. Claim 7 recites the limitation "the ratio of solvent". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Espenscheid (US Patent 4,089,773).

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10. With respect to claim 1, Espenscheid discloses a process for solubilization of solid carbonaceous material comprising:

(one and two) "Heating at a temperature between about 400°F and about 1200°F and a pressure between about 200 and 6000 psi in presence of a hydrogen-donor-liquefaction solvent" (Column 3, lines 1-5).

(four) "Forming a slurry of comminuted carbonaceous material and the solvent and heating the slurry for 0.2 to 3 hours sufficient to convert the slurry into heavy oil or pitch-like consistency" (Column 3, lines 4-11).

(five and six) "At the conclusion of the solubilization step, heavy solids can be removed in a settler. Gaseous products are recovered when the closed system is vented" (Column 7, lines 61-65). "It is a further embodiment of the process to subject the recovered heavy oil products to petroleum refining upgrading to premium motor fuels." (Column 8, lines 36-39).

(seven) "The liquefaction solvent component is recycled to the first step of the process" (Column 8, lines 31-33).

Espenscheid invention also mentions the boiling point of liquefaction solvent to be between 450 to 950°F (Column 3, lines 18-19).

It is to be noted that step (three) requiring separation of slurry product from condensable gas, water, and other liquid fractions is specifically not mentioned by Espenscheid invention. The invention uses the slurry in the liquefaction process and completes steps (one), (two), and (four) together in the same apparatus without any intermediate separation. Since Espenscheid invention uses the separation step after

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steps (five and six), it would have been obvious to one skilled in the art at the time the invention was made to modify Espenscheid invention and use intermediate separation step (three) to obtain a better quality fuel.

It is also to be noted that Espenscheid invention does not specifically mention about vacuum distillation. Since the invention is using a separation step of the solids from the solvent, followed by further refining for upgrading of the heavy oil and pitch-like product, the distillation must have been a vacuum distillation unit to facilitate separation without using a high temperature in the distillation column.

11. With respect to claim 2, Espenscheid discloses the boiling range of liquefaction solvent between 450 and 950°F (see column 3, lines 18-19).

12. With respect to claim 3, Espenscheid discloses that the liquefaction solvent is hydrogen-donor solvent (see column 3, lines 4-5).

13. With respect to claim 4, Espenscheid discloses that the feed to the process comprises of sewage sludge (see column 5, lines 46-47).

14. With respect to claim 5, Espenscheid discloses, " The pulp slurry is dewatered prior to liquefaction processing to remove any water that exceeds the quantity required as a reaction component. The water component of the invention process is provided in

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a quantity between about 0.01 and 2.0 parts by weight per part by weight of the solid carbonaceous component.” (Column 6, lines 39-42).

15. With respect to claims 6 and 7, Espenscheid discloses, “The liquefaction solvent is in a quantity between about 0.5 and 10 parts by weight per part by weight of the comminuted solid carbonaceous material.” (Column 6, lines 31-34).

16. With respect to claim 8, Espenscheid discloses “Heating is done at a temperature between about 400°F and about 1200°F” (Column 3, lines 1-5). It is to be noted that Espenscheid invention uses an integrated approach of having liquefaction and pyrolysis (steps: one - four) in the same apparatus without any intermediate separation.

17. With respect to claim 9, Espenscheid discloses that the recycle solvent to the liquefaction unit (step (two)) has a boiling range between 450-950°F (see column 3, lines 18-19).

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bridle et al (US Patent 5,865,956).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prem C. Singh whose telephone number is 571-272-6381. The examiner can normally be reached on MF 6:30 AM-3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS /111406

